

PROJECT DETAILS

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WEB APP FOR THE VOTING PROCESS

- in-cooperate end-end encryption
- only 1 voter per candidate per day
- use student id as unique identifier of the voters
- can use node red dashboard to show all candidates
- voting includes button clicks and tabs on the dashboard
- once voter's choice is selected, it is locked on, encrypted, saved and counted

Merits

- counting takes place on the go
- voter's choice is encrypted
- friendly UI
- no duplicated records
- only 1 voter is guaranteed to vote once during the voting session
- results are synchronized to cloud or offline server in real time in case of system crash

Demerits

- in case of a bug, voting process and results are compromised [incompatible](#)

Node Red

- contains all the dashboard elements
- UI integrated with back end channel
- updates UI for recent changes in real time
- synchronizes UI interface with back end
- show help links

VB.Net Kingsley

- Contains dashboard elements
- synchronize with back end and database

Operation

- student scans id card bar code [Ceremonial_Exam_](#)
- once scanned, it searches the database and outputs student ID and details on the dashboard
- student proceed to the next station where there is a PC / tablet running Node red server / [VB.Net](#) application
- The welcome screen will be displayed, with student details and portrait of their ID
- The welcome screen will also have friendly nice UI and how to navigate and vote

UI format

- The dashboard will have 4 tabs

- Home

- Presidential candidates

- Councilor candidates

- Help

Home Tab

- Has welcome screen for the SRC voting process, objectives, mission etc
- Show how to navigate the [UI](#)
- Has link to the [Help UI](#)

Presidential Tab

- includes all candidates campaigning
- includes their party org..if any, their profile and clear picture
- candidates are layed out in a nice and easy to navigate and operate, way
- contains a [button click](#) on each candidate for selection
- [button selection](#) is followed by a verification pop up for proceeding and aborting the operation
- only allowed number is allowed, once allowed it rejects editing or another selection entry
- finally [student](#) confirms, one more time their choice
- once [student](#) accepts selection, its locked, encrypted, saved and backed up
- returns to the [Home UI](#)

Councilor Tab

- includes all registered candidates campaigning
- can be derived and inherits all functionalities of the [Presidential UI](#).
- only a maximum of the allowed councillors is allowed

Help Tab

- has connection link to the [Home UI](#)
- Shows how to cast a vote on a candidate
- might include [GIFs](#) to show how to navigate through the [Home UI](#).
- also include [GIFs](#) to navigate on the [Presidential UI](#) and how to cast a vote
- does the same process above for the [Councilor UI](#).

File I/O

- results are saved to a json format file

- also saved in a [database](#) with encrypted [student's](#) voted choice
- encryption key can be generated at random through run time using an [UUID](#) number
- decryption only happens when counting the total
- with this operation, a [student's](#) vote remains unknown to everyone except the [student](#).

Database structure

- structure of saved [database](#) table.
- database has links to another database
- First: includes general student information
- Second: includes particular src results
- column [src-status](#) links to the other database with src related data.

- `first-name, last-name, enrolled, year, part, reg-status, src-status`

- [src-status](#) now looks like

- `president_1, councilor_1, councilor_2, councilor_3, councilor_4, councilor_`

- values are not stored in order, the above column's data is a [UUID](#) representing a candidate's real information

Security

- only 1 person can enter a code to create a decrypting key to decrypted all the [UUIDs](#) and counting commences
- after that, all records are saved to the secure cloud server and refreshed.

Acknowledgements

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